App. No. 09/722,774
Amendment Dated March 10, 2005
Reply to Office Action of December 22, 2004

## Amendments to the Claims

Please amend the claims as follows:

1.    (currently amended)   A computer-implemented method for compressing profiling data, the method comprising:

collecting the profiling data to be compressed during execution of an application using at least one probe;

collecting a sample of the profiling data to be compressed;

comparing the profiling data to the sample of the profiling data to determine difference information;

determining whether the difference information is time stamp difference information or stack difference information as a function of the type of data to be compressed;

responding to the difference information satisfying a size constraint by encoding the difference information with reference to a set of commonly occurring difference values for the a type of profiling the data to be compressed;

accumulating the difference information in a buffer; and

compressing the difference information such that the type of probe is independent of the type of profiling data to be compressed.

2.    (currently amended)   The method of claim 1, further comprising, before comparing the profiling data to the sample of the profiling data determining the difference information, storing an initial counter value for the data to be compressed.

3.    (previously presented)        The method of claim 1, further comprising storing the contents of the buffer in a profiling data file in response to the buffer accumulating a predetermined amount of difference information.

4.    (cancelled)

5.    (currently amended)   The method of claim 1, further comprising, if the difference information is determined to be timestamp difference information, encoding the difference

information as an unsigned quantity with reference to a set of commonly occurring timestamp difference values.

6.    (currently amended)   The method of claim 1, further comprising, if the difference information is determined to be stack difference information:

encoding the difference information as an unsigned quantity with reference to a set of commonly occurring stack difference values, and

reconstructing a sign of a stack difference value from a context of one of: function entry and function exit.

7.    (currently amended)   The method of claim 1, further comprising, if the difference information is determined to be stack difference information, dividing a quantity represented by the difference information by four before encoding the difference information.

8.    (previously presented)       The method of claim 1, further comprising, if the type of data to be compressed is stack data collected upon entry to and exit from a function, recording a single difference value for the stack data.

9.    (currently amended)   A computer-implemented method for compressing profiling data, the method comprising:

collecting the profiling data during execution of an application using at least one probe;

collecting a sample of the profiling data to be compressed;

comparing the profiling data to the sample of the profiling data to determine difference information;

determining whether the difference information is time stamp difference information or stack difference information as a function of the type of profiling data;

if the profiling data is determined to be timestamp data, encoding the difference information as an unsigned quantity with reference to a set of commonly occurring timestamp difference values;

if the profiling data is determined to be stack data:

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encoding the difference information as an unsigned quantity with reference to a set of commonly occurring stack difference values, and

reconstructing a sign of a stack difference value from a context of one of: function entry and function exit;

accumulating the difference information in a buffer; and

compressing the difference information such that the ~~type of~~ probe is independent of the type of profiling data.

10.    (currently amended)   A computer-readable medium having stored thereon computer-executable modules comprising:

at least one probe, configured to:

collect profiling data <u>to be compressed</u> during execution of an application, <u>and</u>

<u>collect a sample of the profiling data to be compressed</u>; and

a buffer, configured to:

<u>compare the profiling data to the sample of the profiling data to determine difference information,</u>

determine <u>whether the</u> difference information <u>is time stamp difference information or stack difference information</u> ~~as a function of the type of profiling data~~,

respond to the difference information satisfying a size constraint by encoding the difference information with reference to a set of commonly occurring difference values for a type of the profiling data,

accumulate the difference information, and

compress the difference information such that the ~~type of~~ probe is independent of the type of profiling data.

11.    (currently amended)   The computer-readable medium of claim 10, wherein the buffer is further configured to, before <u>the profiling data is compared to the sample of the profiling data</u> ~~determining the difference information~~, store an initial counter value for the profiling data.

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12.     (previously presented)     The computer-readable medium of claim 10, wherein the computer-executable modules further comprise a logger, configured to receive and store the contents of the buffer in a profiling data file in response to the buffer accumulating a predetermined amount of difference information.

13.     (previously presented)     The computer-readable medium of claim 12, wherein the buffer is further configured to transfer the compressed contents of the buffer to the logger.

14.     (currently amended)   The computer-readable medium of claim 10, wherein the buffer is further configured to, if the difference information is determined to be timestamp difference information, encode the difference information as an unsigned quantity with reference to a set of commonly occurring timestamp difference values.

15.     (currently amended)   The computer-readable medium of claim 10, wherein the buffer is further configured to, if the difference information is determined to be stack difference information:
    encode the difference information as an unsigned quantity with reference to a set of commonly occurring stack difference values, and
    reconstruct a sign of a stack difference value from a context of one of: function entry and function exit.

16.     (currently amended)   The computer-readable medium of claim 10, wherein the buffer is further configured to, if the difference information is determined to be stack difference information, divide a quantity represented by the difference information by four before encoding the difference information.

17.     (currently amended)   The computer-readable medium of claim 10, wherein the buffer is further configured to, if the type of profiling data is determined to be stack data that is collected upon entry to and exit from a function, record a single difference value for the stack data.

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18.    (currently amended)    A computer-readable medium having stored thereon computer-executable modules comprising:

at least one probe, configured to:

collect profiling data during execution of an application, and

collect a sample of the profiling data to be compressed; and

a buffer, configured to:

compare the profiling data to the sample of the profiling data to determine difference information,

determine whether the difference information is time stamp difference information or stack difference information as a function of the type of profiling data,

if the type of profiling data is determined to be timestamp data, encode the difference information as an unsigned quantity with reference to a set of commonly occurring timestamp difference values,

if the type of profiling data is determined to be stack data:

encode the difference information as an unsigned quantity with reference to a set of commonly occurring stack difference values, and

reconstruct a sign of a stack difference value from a context of one of: function entry and function exit,

accumulate the difference information, and

compress the difference information such that the type of probe is independent of the type of profiling data.

19.    (currently amended)    A computer arrangement comprising:

at least one probe, configured to:

collect profiling data during execution of an application, and

collect a sample of the profiling data to be compressed; and

a buffer, configured to:

compare the profiling data to the sample of the profiling data to determine difference information,

determine whether the difference information is time stamp difference information or stack difference information as a function of the type of profiling data,

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respond to the difference information satisfying a size constraint by encoding the difference information with reference to a set of commonly occurring difference values for the type of profiling data,

accumulate the difference information, and

compress the difference information such that the type of probe is independent of the type of profiling data.

20.    (currently amended)  The computer arrangement of claim 19, wherein the buffer is further configured to, before the profiling data is compared to the sample of the profiling data determining the difference information, store an initial counter value for the profiling data.

21.    (previously presented)        The computer arrangement of claim 19, wherein the computer-executable modules further comprise a logger, configured to receive and store the contents of the buffer in a profiling data file in response to the buffer accumulating a predetermined amount of difference information.

22.    (previously presented)        The computer arrangement of claim 21, wherein the buffer is further configured to, in response to accumulating the predetermined amount of difference information, transfer the compressed contents to the logger.

23.    (currently amended)  The computer arrangement of claim 19, wherein the buffer is further configured to, if the difference information is determined to be timestamp difference information, encode the difference information as an unsigned quantity with reference to a set of commonly occurring timestamp difference values.

24.    (currently amended)  The computer arrangement of claim 19, wherein the buffer is further configured to:

if the difference information is determined to be stack difference information, encode the difference information as an unsigned quantity with reference to a set of commonly occurring stack difference values, and

reconstruct a sign of a stack difference value from a context of one of: function entry and function exit.

25.    (currently amended)   The computer arrangement of claim 19, wherein the buffer is further configured to, if the difference information is <u>determined to be</u> stack difference information, divide a quantity represented by the difference information by four before encoding the difference information.

26.    (previously presented)       The computer arrangement of claim 19, wherein the buffer is further configured to, if the profiling data is stack data collected upon entry to and exit from a function, record a single difference value for the stack data.

27.    (currently amended)   A computer arrangement comprising:
at least one probe, configured to<u>:</u>
    collect profiling data <u>to be compressed</u> during execution of an application<u>, and</u>
    <u>collect a sample of the profiling data to be compressed;</u> and
a buffer, configured to:
    <u>compare the profiling data to the sample of the profiling data to determine difference information,</u>
    determine <u>whether the</u> ~~difference information as a function of the type of~~ profiling data <u>is time stamp data or stack data,</u>
    if the type of profiling data is <u>determined to be</u> timestamp data, encode the difference information as an unsigned quantity with reference to a set of commonly occurring timestamp difference values, and
    if the type of profiling data is <u>determined to be</u> stack data:
        encode the difference information as an unsigned quantity with reference to a set of commonly occurring stack difference values, and
        reconstruct a sign of a stack difference value from a context of one of: function entry and function exit,
        accumulate the difference information, and

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compress the difference information such that the ~~type of~~ probe is
independent of the type of profiling data.

Claims 28-33 (cancelled)